

NCR-19-7533



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

D119-646-041
Job Sheet 174911



Part No: D119-646-041

Job Qty: 1 ea

Part Name: AW119 Replacement Skidtube with Wearpads - Fits LH or RH



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 3/23/18

Job Tracking No:

Due Date: 5/3/18

Created By: Michelle Gagnon-Donovan

Type: SOLD

Description:

Note: DWG IIN-D119-646 REV D, D3887-041 REV E SHEETS 1,2,5,7,8,10,11 IPP RevA: New issue DD verified by:EC IPP rev B 10.02.22 per PAR 09-043 EC verified by:DD IPP REV C 12.11.05 (DEOD3887-B-1)(ecn 12-675) DD verf:JLM IPP REV:D 13.03.20 per chg003 ECN13-534 DD verf:JLM IPP REV:E 17.05.19 as per dwg D3887 rev.e DD verf:JFS

Ship Via:

Bill of Materials



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
CANADA
TEL: 1 613 632-5200
Email: sales@dartaero.com
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Container No: S059872



Part: D119-646-041

Job No: 174911

Serial No/Batch: S059872

Revision:

Inspector:

Date: 04/11/18

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	1 Ea		5/2/18	0.00	0.00	Start Up Skid tubes-1		JY
110	Skid tubes	1 pcs		5/2/18	0.00	0.25	Skid tubes-1		JY
120	HandFinish	1 pcs		5/2/18	0.00	0.83	HandFinish1		SA 18-04-17
121	QC	1 pcs		5/2/18	0.00	0.00	QC7-1		BE
122	QC	1 pcs		5/2/18	0.00	0.00	QC5		BE
130	Skid tubes	1 pcs		5/2/18	0.00	1.54	Skid tubes-1		
135	QC	1 pcs		5/2/18	0.00	0.00	QC5		BE
140	Skid tubes	1 pcs		5/2/18	0.00	1.47	Skid tubes-1		Mina Jct
150	QC	1 pcs		5/2/18	0.00	0.00	QC5		BE
160	Skid tubes	1 pcs		5/2/18	0.00	1.61	Skid tubes-1		BE DAS 38
170	QC	1 pcs		5/2/18	0.00	0.00	QC5		0-88 DAS 38
180	QC	1 pcs		5/2/18	0.00	0.00	QC10		
190	HandFinish	1 pcs		5/2/18	0.00	0.83	HandFinish2		D.B. 18/08/20
200	Powdercoat	1 pcs		5/2/18	0.00	0.22	Powdercoat1		DK 18-8-21
210	QC	1 pcs		5/2/18	0.00	0.00	QC3		UL 18-08-21
220	HandFinish	1 pcs		5/2/18	0.00	3.83	HandFinish4		UL 18-08-21
240	HandFinish	1 pcs		5/3/18	0.00	2.00	HandFinish4		UL 18-08-21
245	QC	1 pcs		5/3/18	0.00	0.00	QC5		38
255	DC	1 pcs		5/3/18	0.00	0.00	DC		9-88
260	Packaging	1 pcs		5/3/18	0.00	0.00	Packaging3-1		
270	QC21-FG	1 Ea		5/3/18	0.00	0.00	QC21		AUG 27 2018

Part Op 110 - 1- inspect Mat'L D2500-1-190 for damage 2-Cut tube to length as per dwg D3887 (154.8") 3- Ensure squareness of Descriptions: ends and scribe batch#

130 - 1- Install drill Jig DT9477 drill X-bolt spacer pilot holes using 3/16" drill first side only. 2- 2nd side, locating from first saddle holes use DT9861 A/B to drill 2nd side fwd saddle holes. 3- 2nd side locating from fwd saddle drill remaining crossbolt spacer holes using DT9477 4- Open crossbolt spacer holes to finished size as per dwg D3887 (section D-D and E-E) ***DO NOT OPEN FWD Saddle Holes*** 5- Deburr, blow out chips from inside of tube. 6- Bond web in place as per Dwg D3887 & QSI 015. A/R 13887 2018/12/22

140 - 1- Bend FWD end of tube using bender 1 and FOLIO 31 bend prog. D3887.***Must use bending aid DT9544, ensure proper positioning*** 2- Cut FWD end of tube as per dwg D3887.***Verify measurement*** 3- Buff out marks left from bending 4- Drill FWD cap holes using DT8215. Open FWD & AFT cap holes to 0.208" 5- Open FWD saddle holes to finished size as per dwg D3887 6- Drill FWD x-bolt spacer holes using DT9816 and open to finished size.(verify measurement) 7- Drill Tow ring hole, using DT10047 locate from FWD saddle hole. (verify measurement). Open to finished size. 8- Drill 1.87" and 3.74 holes using DT10045 A&B locate from FWD saddle hole. (verify measurement) as per dwg. 9- C'sink FWD cap hole as per detail "C" 10- Drill holes for wearpads using DT8931, open to 0.297". 11- Countersink crossbolt spacer holes, and prepare tube for welding, deburr. 12- Deburr and blow out chips from inside of tube.

160 - NOTE:TACK IN 2 MOST FWD X-BOLT SPACERS AND TEST FIT FWD GROUND HANDLING FIXTURE,IF FIXTURE FITS WELL THEN PROCEED. FIXTURE DT10091. 1-Insert crossbolt spacers. Weld as per QSI 004 and Dwg D3887. Remember to back drill each hole before welding the other side. Use aluminum rod A/R 2-Grind cross bolt welds flush as per Dwg D3887. Ensure no pin hole. 3-Counterbore 5/16" x 0.750" deep as per Dwg D3887. 4- Deburr & Scribe batch # on Aft end of tube.

170 - TEST FIT USING FIXTURE DT10091.

190 - Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch.

200 - ***MASK AREA SHOWN ON SHEET 7, NOTE 9*** START TIME: 12:45 OVEN TEMPERATURE:

FINISH TIME: 1:15

220 - 1-Install inserts as per Dwg D3887.

240 - 1-Install inserts as per Dwg D3887. 2-Install wearpads, gaskets as per Dwg D3887. Put sikaflex in insert before installing bolts and washers A/R Sikaflex-240/-291 Sikaflex expire date: 3-assemble o'ring to plug as per dwg D3492 and apply o'ring lube A/R 55-o'ring lube batch: 4 -Inspect for foreign objects as per QSI 024 5 -Install D2855-3 Cap and seal with Sikaflex. Clean excess adhesive. A/R Sikaflex-240/-291 Sikaflex expire date: 6 -Install insert in D2855- Cap. Install cap and seal with Sikaflex.

Clean excess adhesive. A/R Sikaflex-240/-291 Sikaflex expire date: 7- Wing Walk as per dwg and QSI Batch:

255 - Photocopy bluefile & type labels per PPP D119-646-041 CHG004

205047

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
D2500-1-190	Ext'n -1' Beam Tube 4"	1 Ea (1 ea)	90-Start up Operation	4023162
D2579	Crossbolt Spacer	2 Ea (2 ea)	140-Skidtubes	5051552
D3885-1	Standard Web	1 Ea (1 ea)	140-Skidtubes	361481
D2855-5	Cap	1 Ea (1 ea)	160-Skidtubes	5016959
D3681-1	Spacer	12 Ea (12 ea)	160-Skidtubes	5084724
D3903-1	Spacer	12 Ea (12 ea)	160-Skidtubes	5084655 x11 (8888888888) 5071100 x1
ALS4-1032-130	Rivnut	33 Ea (33 ea)	240-HandFinish	5002779
ALS4-1032-225	Rivnut	1 Ea (1 ea)	240-HandFinish	5059138
AN3C4A	Bolt	6 Ea (6 ea)	240-HandFinish	5060051
AN3C5A	Bolt	26 Ea (26 ea)	240-HandFinish	5093214 5057446
D2855-3	Cap	1 Ea (1 ea)	240-HandFinish	5066002
D3492-5	Plug	24 Ea (24 ea)	240-HandFinish	x 5002813
D3672-1	Washer, Phenolic	2 Ea (2 ea)	240-HandFinish	F163255-1
D3847-1	Wearpad	5 Ea (5 ea)	240-HandFinish	5084440
D3847-11	Wearpad	1 Ea (1 ea)	240-HandFinish	5058269
MS24694-C52	Screw	2 Ea (2 ea)	240-HandFinish	5067264-1
NAS1149C0332R	Washer	32 Ea (32 ea)	240-HandFinish	5071663
NAS1611-005	O-Ring	24 Ea (24 ea)	240-HandFinish	5057657

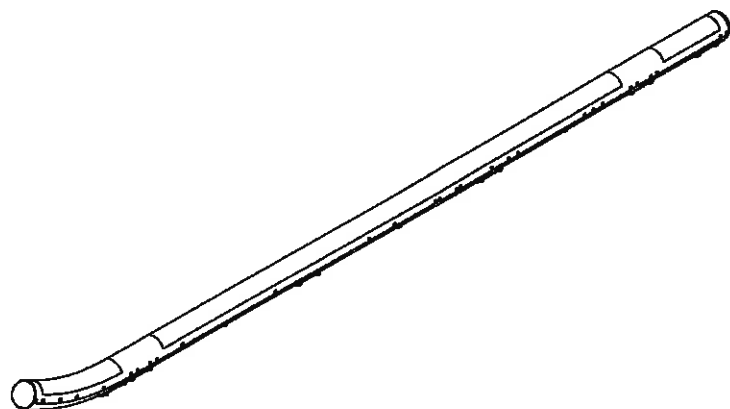
Job Allocations

Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	D2500-1-190	1	85	0
140-Skidtubes	D2579	2	89	0
	D3885-1	1	16	0
160-Skidtubes	D2855-5	1	94	0
	D3681-1	12	248	0
	D3903-1	12	37	0
240-HandFinish	ALS4-1032-130	33	7,007	0
	ALS4-1032-225	1	1,148	0
	AN3C4A	6	2,521	0
	AN3C5A	26	189	0
	D2855-3	1	9	0
	D3492-5	24	26	0
	D3672-1	2	1,071	0
	D3847-1	5	28	0
	D3847-11	1	19	0
	MS24694-C52	2	61	0
	NAS1149C0332R	32	4,896	0
	NAS1611-005	24	235	0

Part Specifications

Specifications could not be found.

Plex 3/23/18 9:14 AM Dart.Gagnon.Michelle



D3887-041 STANDARD SKIDTUBE ASSY WITH WEARPAD(SHOWN)
D3887-043 STANDARD SKIDTUBE ASSY WITH WEARPLATE (SIMILAR)
D3887-045 STANDARD SKIDTUBE ASSY WITH TRAINING WEARPLATE (SIMILAR)

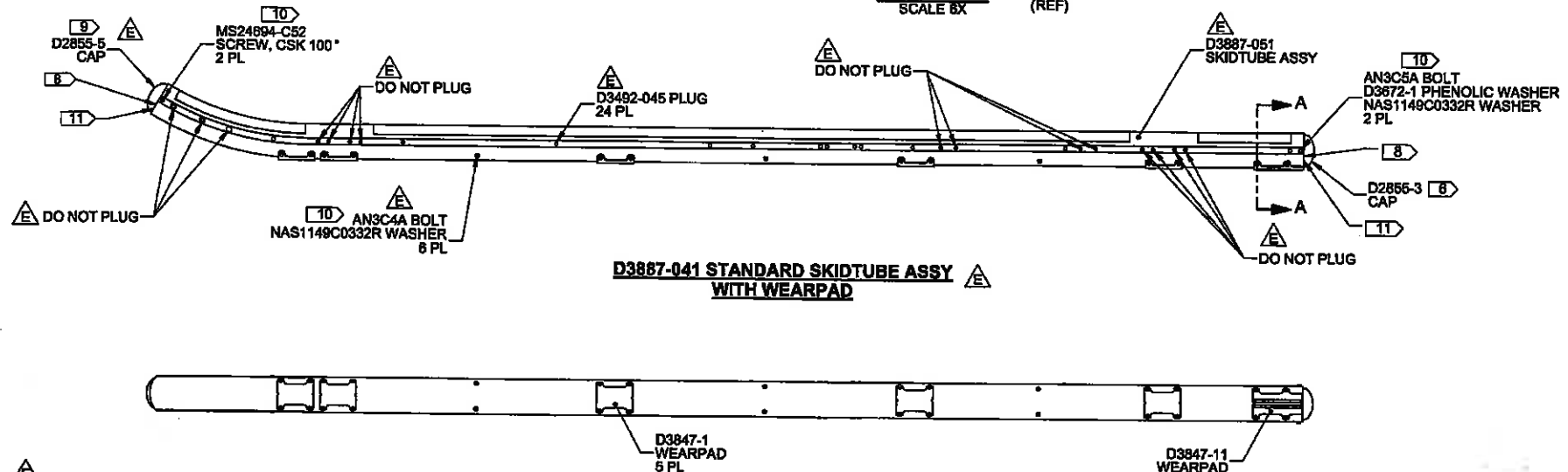
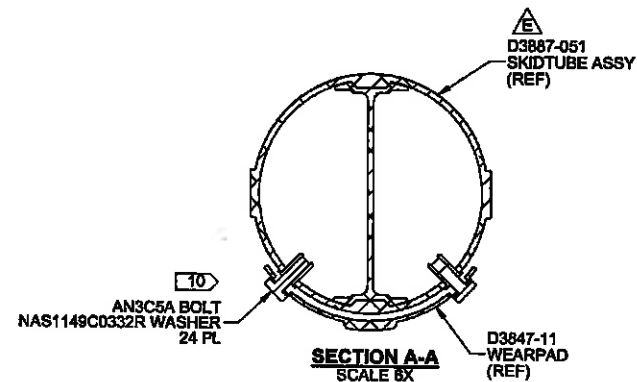
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 WORK ORDER
 NO. 174911
 MAR 26 2018

E	COMPLETE REDRAW. ADDED ASSY DETAILS -3, -051 & -053. SEE PREVIOUS REV. FOR DETAIL. POWDER COAT REMOVED FROM SADDLE AREA SEE DETAIL F. REF PART 15-421. ADDED STRUCTURAL PROVISIONS TO ALLOW FOR THE INSTALLATION OF THE D119-848-313/314 SKIDTUBE PROTECTOR KIT. REF PART 17-577. CHANGE QTY OF D2855-3. ADDED D2855-5 CAP ASSEMBLY. ADDED INSTRUCTIONS TO LOCATE INSERT HOLE FOR D2855-5 CAP. REF PART 17-563	AJS / WK	17.02.03
D	REVISED BEND TOLERANCES FOR MANUFACTURABILITY. 135.07 WAS 134.04 (ZN D5-5). ADD 5.07 (ZN C5-3). ADD 116.6 (ZN D5-6). DELETE GASKETS (BOM, SH 2)	DB	13.09.20
C	(SH 1) PL ZN C2-2, C3-2, C4-2 ITEM 13, QTY 2 WAS 4. ITEM 42, QTY 32 WAS 34. ITEM 44, QTY 30 WAS 32. ADD ITEM 46, MS24694-C52 WAS ANSCSA, 2 PLCS. (ZN C1-5, C1-6, B4-7) Ø 0.201 CSK Ø 0.385 X 100" WAS Ø 0.214 THRU. ADDED DETAIL F (ZN C5-5, C5-6, B5-7). ADD ITEM 10, D2578 CROSS BOLT SPACER (ZN C4-1, A5-7)	DB	13.02.19
B	ALS4-1032-130 WAS AEL9-1032-130 (ZN C4-1, C5-7, C3-7). ADD DT5931 (ZN A5-1). ADD 134.04 (ZN C4-5). D2855-3 WAS D2575 (ZN D4-1, C7-2, C2-2, C7-3, C2-3, C7-4, C2-4). ANSCSA WAS ANSC4A (ZN C5-2, C5-3, C5-4, C5-5, C5-6, C2-4). Ø 0.313 WAS Ø 0.328 (ZN C4-5, C4-6, C2-7 & B3-7) REVISED NOTE W (ZN B3-7)	RF	09.06.30
A	NEW ISSUE	RF	09.03.30
REV.	DESCRIPTION		
BY	DATE		
DESIGN	RF	DART AEROSPACE USA, INC. EUGENE, OR	
DRAWN	WK		
CHECKED	RF	DRAWING NO.	REV. E
MFG. APPR.	DD	D3887	SHEET 1 OF 11
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	A119 STD SKIDTUBE ASSY	NTS
DATE	17.02.03		

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 2017-05-08
 17-519

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ITEM	QTY -041	P/N	DESCRIPTION
	X	D3887-041	STANDARD SKIDTUBE ASSY WITH WEARPAD
1	1	D2855-3	CAP ASSY
2	1	D2855-5	CAP ASSY
3	24	D3492-045	PLUG ASSY
4	2	D3672-1	PHENOLIC WASHER
5	5	D3847-1	WEARPAD
6	1	D3847-11	WEARPAD
7	1	D3887-051	SKIDTUBE ASSY
8	1	ALS4-1032-225	INSERT
9	28	AN3C5A	BOLT
10	6	AN3C4A	BOLT
11	2	MS24694-C52	SCREW, CSK 100°
12	32	NAS1149C0332R	WASHER



**D3887-041 STANDARD SKIDTUBE ASSY
WITH WEARPAD**



NOTES:

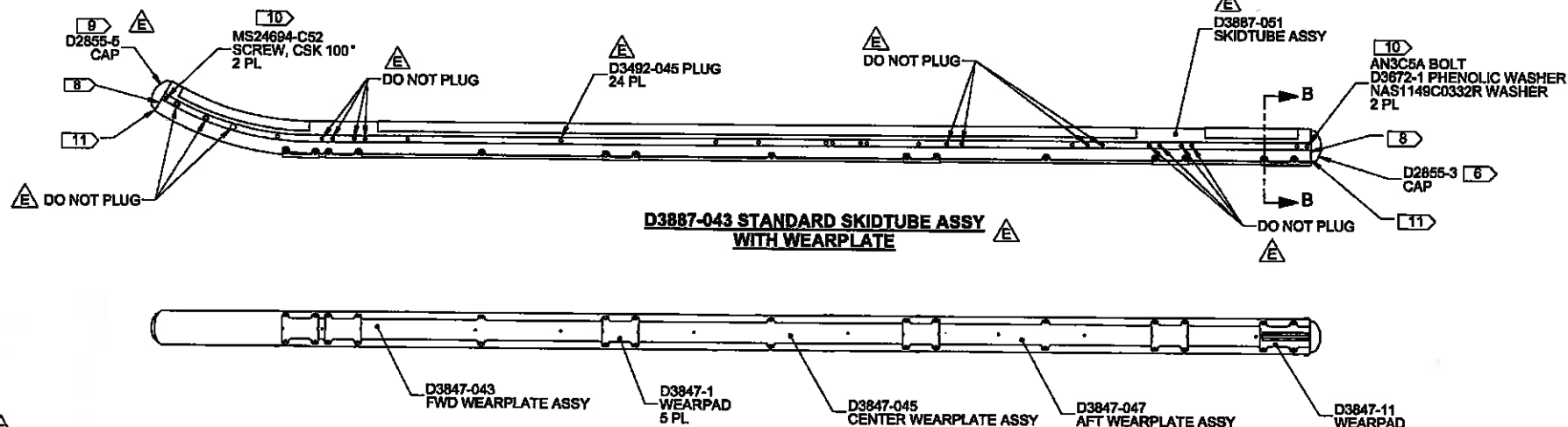
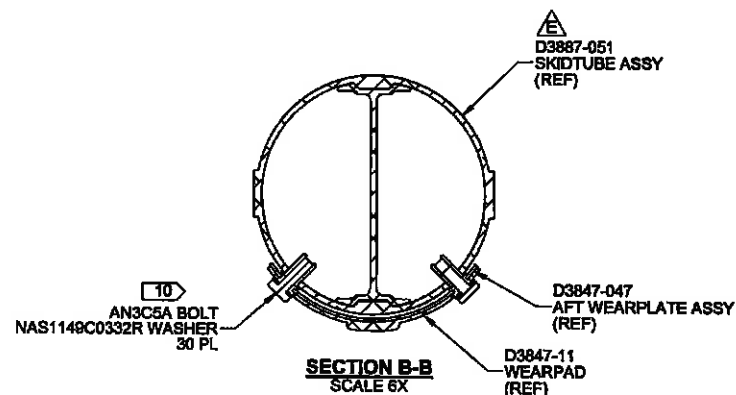
- 1) MATERIAL: N/A
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3887-041" AND BATCH NUMBER PER QSI 044 6.4 ON THE ID OF THE TUBE, BEFORE INSTALLING THE AFT D2855-3 CAP
- 7) WEIGHT: 32.0 lbs
- 8) RELIEVE INNER RIDGE OF EXTRUSION, AS NEEDED, TO ALLOW FOR INSTALLATION OF D2855-3 AND D2855-5 CAP ASSY, ALODINE BARE MATERIAL
- 9) USE D3887-051 SKIDTUBE ASSY TO LOCATE AND BACKDRILL UNDRILLED INSERT HOLE INTO D2855-5 CAP. OPEN HOLE TO Ø 0.297, ALODINE BARE MATERIAL AND INSTALL ALS4-1032-225 (OR AKS7-1032-225, OR ALS7-1032-225, OR AKS4-1032-225) INSERT ON INSIDE OF CAP.
- 10) SEAL FASTENERS WITH SIKAFLEX -241/291 OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT
- 11) SEAL MATING SURFACES WITH SIKAFLEX -241/291 OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT

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MFG. APPR.	DD	D3887	SHEET 2 OF 11
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DE APPR.	DS	A119 STD SKIDTUBE ASSY	NTS
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ITEM	QTY -043	P/N	DESCRIPTION
	X	D3887-043	STANDARD SKIDTUBE ASSY WITH WEARPLATE
1	1	D2855-3	CAP ASSY
2	1	D2855-5	CAP ASSY
3	24	D3492-046	PLUG ASSY
4	2	D3672-1	PHENOLIC WASHER
5	1	D3847-043	FWD WEARPLATE ASSY
6	1	D3847-045	CENTER WEARPLATE ASSY
7	1	D3847-047	AFT WEARPLATE ASSY
8	5	D3847-1	WEARPAD
9	1	D3847-11	WEARPAD
10	1	D3887-051	SKIDTUBE ASSY
11	1	ALS4-1032-225	INSERT
12	32	AN3CSA	BOLT
13	2	MS24694-C52	SCREW, CSK 100°
14	32	NAS1149C0332R	WASHER



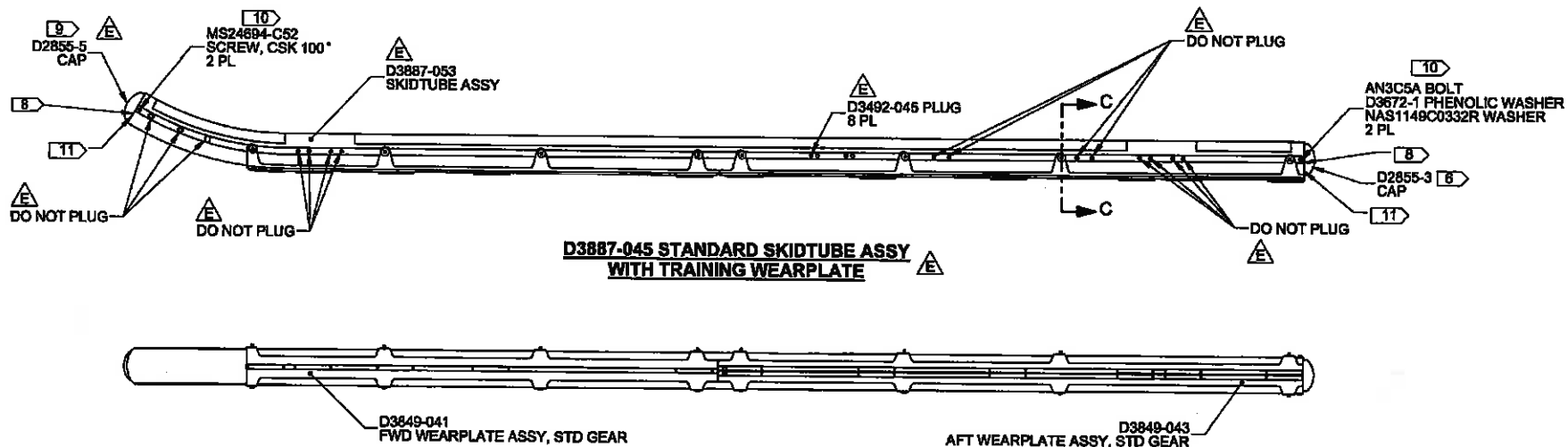
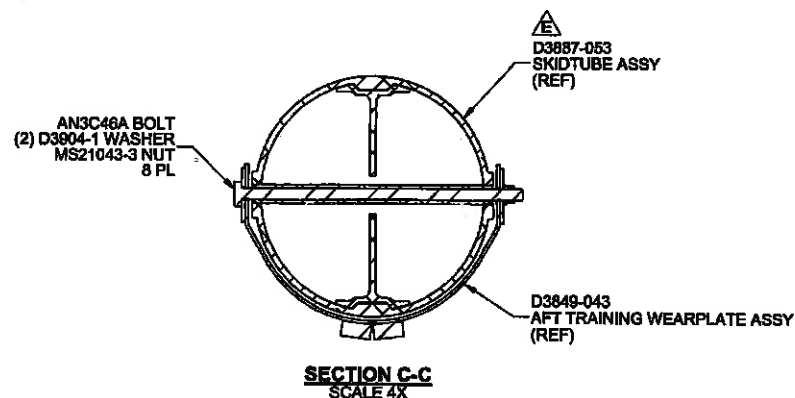
- NOTES:**
- 1) MATERIAL: N/A
 - 2) FINISH: NONE
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: N/A
 - 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3887-043" AND BATCH NUMBER PER QSI 044 6.4 ON THE ID OF THE TUBE, BEFORE INSTALLING THE AFT D2855-3 CAP
 - 7) WEIGHT: 37.0 lbs
 - 8) RELIEVE INNER RIDGE OF EXTRUSION, AS NEEDED, TO ALLOW FOR INSTALLATION OF D2855-3 AND D2855-5 CAP ASSY, ALODINE BARE MATERIAL
 - 9) USE D3887-051 SKIDTUBE ASSY TO LOCATE AND BACKDRILL UNDRILLED INSERT HOLE INTO D2855-5 CAP. OPEN HOLE TO Ø0.297, ALODINE BARE MATERIAL AND INSTALL ALS4-1032-225 (OR AKS7-1032-225, OR ALS7-1032-225, OR AKS4-1032-225) INSERT ON INSIDE OF CAP.
 - 10) SEAL FASTENERS WITH SIKAFLEX -241/291 OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT
 - 11) SEAL MATING SURFACES WITH SIKAFLEX -241/291 OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT

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ITEM	QTY	P/N	DESCRIPTION
	X	D3887-045	STANDARD SKIDTUBE ASSY WITH TRAINING WEARPLATE
1	1	D2855-3	CAP ASSY
2	1	D2855-5	CAP ASSY
3	8	D3492-045	PLUG
4	2	D3672-1	PHENOLIC WASHER
5	1	D3849-041	FWD WEARPLATE ASSY, STD GEAR
6	1	D3849-043	AFT WEARPLATE ASSY, STD GEAR
7	1	D3887-053	SKIDTUBE ASSY
8	16	D3904-1	WASHER
9	1	ALS4-1032-225	INSERT
10	8	AN3C46A	BOLT
11	2	AN3C5A	BOLT
12	8	MS21043-3	NUT, SELF-LOCKING
13	2	MS24684-C52	SCREW, CSK 100"
14	2	NAS1149C0332R	WASHER



- NOTES:
- 1) MATERIAL: N/A
 - 2) FINISH: NONE
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: N/A
 - 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3887-045" AND BATCH NUMBER PER QSI 044 6.4 ON THE ID OF THE TUBE, BEFORE INSTALLING THE AFT D2855-3 CAP

- 7) WEIGHT: 38.1 lbs
- 8) RELIEVE INNER RIDGE OF EXTRUSION, AS NEEDED, TO ALLOW FOR INSTALLATION OF D2855-3 AND D2855-5 CAP ASSY, ALODINE BARE MATERIAL
- 9) USE D3887-053 SKIDTUBE ASSY TO LOCATE AND BACKDRILL UNDRILLED INSERT HOLE INTO D2855-5 CAP. OPEN HOLE TO Ø0.297, ALODINE BARE MATERIAL AND INSTALL ALS4-1032-225 (OR AKS7-1032-225, OR ALS7-1032-225, OR AKS4-1032-225) INSERT ON INSIDE OF CAP.
- 10) SEAL FASTENERS WITH SIKAFLEX -241/291 OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT
- 11) SEAL MATING SURFACES WITH SIKAFLEX -241/291 OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT

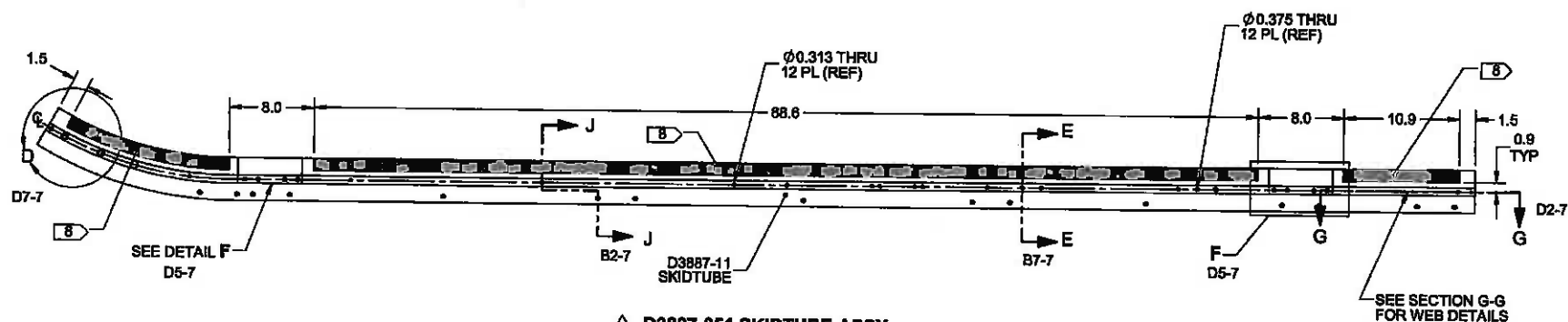
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ITEM	QTY	P/N	DESCRIPTION
	X	D3887-051	SKIDTUBE ASSY
1	2	D2579	CROSS BOLT SPACER
2	12	D3881-1	CROSS BOLT SPACER
3	1	D3885-1	STANDARD WEB
4	1	D3887-11	SKIDTUBE
5	12	D3903-1	CROSS BOLT SPACER
6	30	ALS4-1032-130	INSERT



D3887-051 SKIDTUBE ASSY
(WELDING DETAIL)

NOTES:

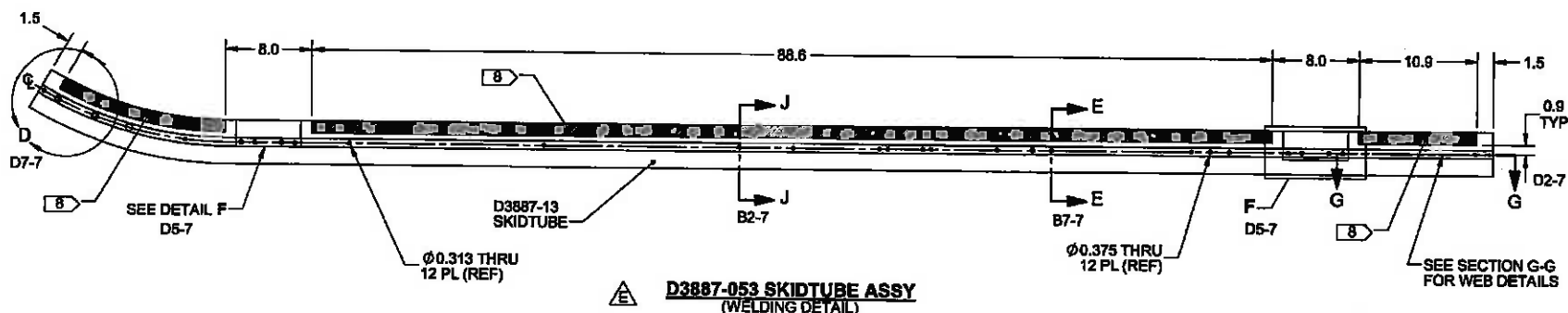
- 1) MATERIAL: N/A
- 2) FINISH: POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY AT NEXT ASSEMBLY
- 7) WEIGHT: N/A
- 8) AFTER APPLICATION OF FINISH, PAINT TOP SURFACE OF SKIDTUBE WITH MIL-W-5044 ANTI-SKID PAINT (WING WALK) AS INDICATED TO 0.50 ABOVE LOCATION RIDGE, PER QSI 005 SECTION 4.4

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APPROVED	HS	TITLE	SCALE
DE APPR.	DS	A119 STD SKIDTUBE ASSY	NTS
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ITEM	QTY	P/N	DESCRIPTION
	X	D3887-053	SKIDTUBE ASSY
1	2	D2579	CROSS BOLT SPACER
2	12	D3681-1	CROSS BOLT SPACER
3	1	D3885-1	STANDARD WEB
4	1	D3887-13	SKIDTUBE
5	12	D3903-1	CROSS BOLT SPACER



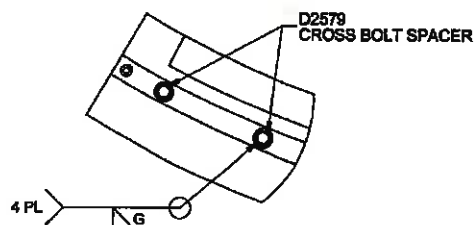
NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY AT NEXT ASSEMBLY
- 7) WEIGHT: N/A
- 8) AFTER APPLICATION OF FINISH, PAINT TOP SURFACE OF SKIDTUBE WITH MIL-W-5044 ANTI-SKID PAINT (WING WALK) AS INDICATED TO 0.50 ABOVE LOCATION RIDGE, PER QSI 005 SECTION 4.4

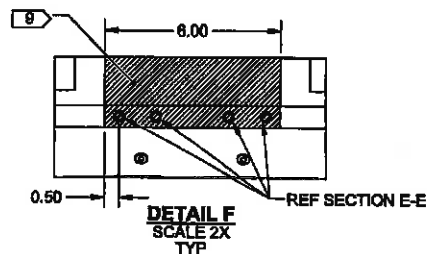
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2017-05-08

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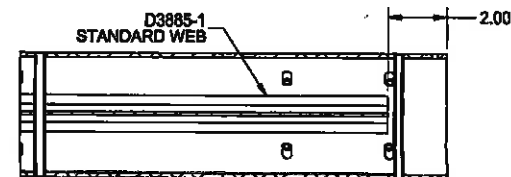
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DRAWN	WK	EUGENE, OR	
CHECKED	RF	DRAWING NO.	REV. E
MFG. APPR.	DD	D3887	SHEET 6 OF 11
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	A119 STD SKIDTUBE ASSY	NTS
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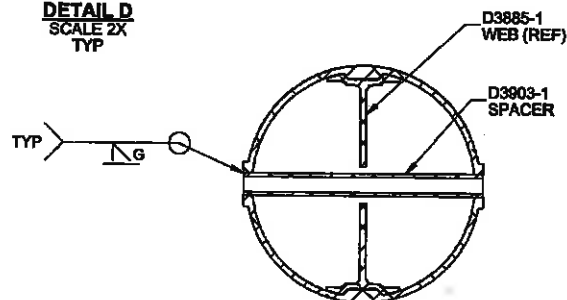
DETAIL D
SCALE 2X
TYP



DETAIL F
SCALE 2X
TYP

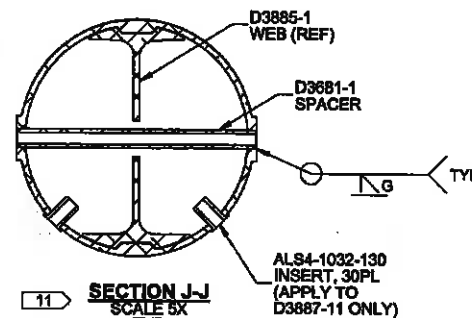


SECTION G-G
SCALE 2X
TYP



SECTION E-E
SCALE 5X
TYP

(FOR 12X $\phi 0.375$ HOLES
PER SKIDTUBE)



SECTION J-J
SCALE 5X
TYP

(FOR 12X $\phi 0.313$ HOLES
PER SKIDTUBE)

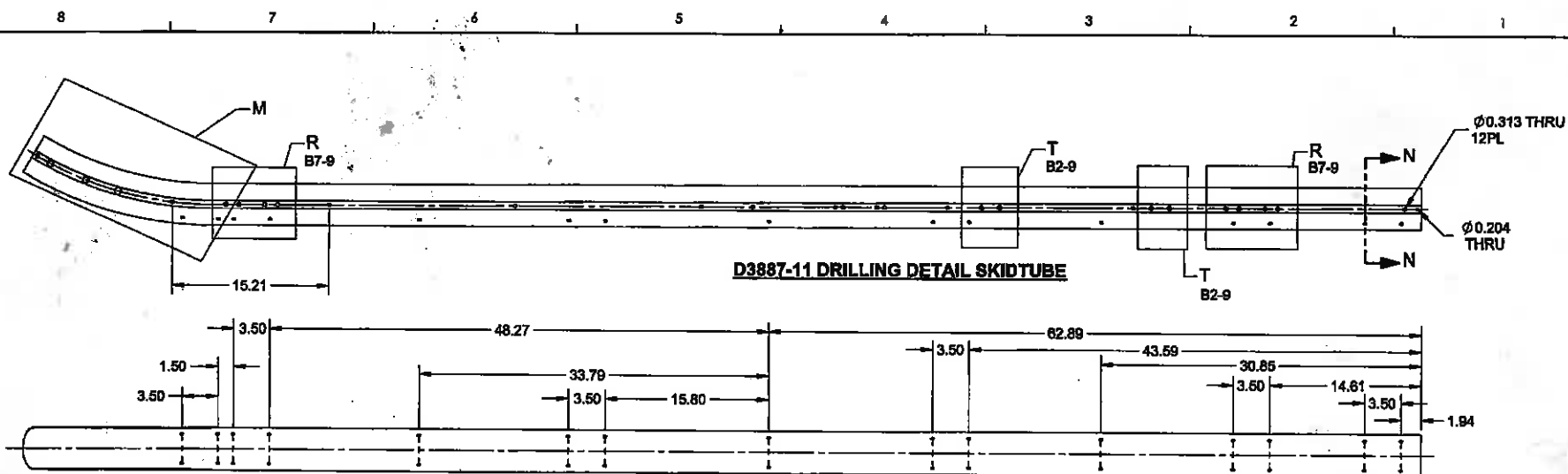
NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY AT FINAL ASSEMBLY
- 7) WEIGHT: N/A
- 8) INSERT D3885-1 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH SIKAFLEX-241-291 ADHESIVE PER DART QSI 015 AFTER BENDING. ENSURE HOLES LINE-UP
- 9) MASK THIS AREA AND DO NOT POWDER COAT
- 10) AFTER DRILLING AND BENDING ASSEMBLY, PERFORM THE FOLLOWING FOR THE SECTION E-E $\phi 0.375$ HOLES ONLY:
 - i) CHAMFER HOLES $\phi 0.475 \times 45^\circ$
 - ii) INSERT D3903-1 SPACER
 - iii) WELD INTO PLACE AND GRIND FLUSH
 - iv) C'BORE TO $\phi 0.313 \times 0.75$ DEEP
 - v) DEBURR HOLES
- 11) AFTER DRILLING AND BENDING ASSEMBLY, PERFORM THE FOLLOWING FOR THE SECTION J-J $\phi 0.313$ HOLES ONLY:
 - i) CHAMFER HOLES $\phi 0.354 \times 45^\circ$ OR 0.060 DEEP $\times 45^\circ$ (BOTH SIDES)
 - ii) INSERT D3881-1 SPACER
 - iii) WELD INTO PLACE AND GRIND FLUSH
 - iv) DEBURR HOLES
- 12) WELD PER DART QSI 004

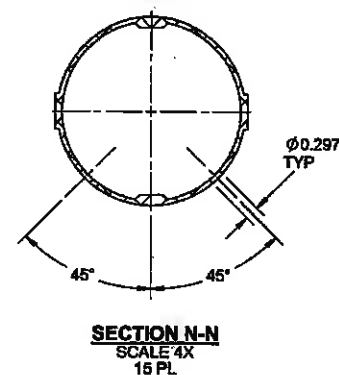
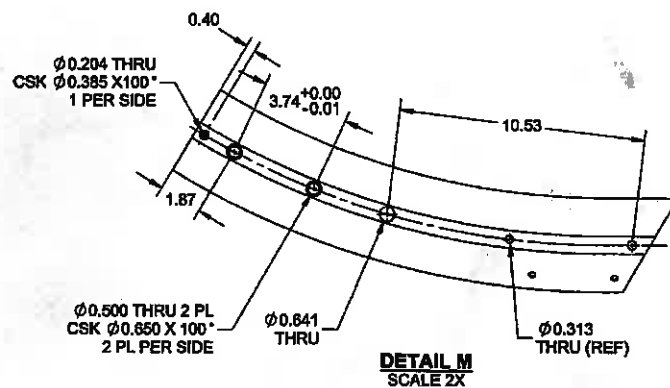
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2017-05-08

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CHECKED	RF	DRAWING NO.	REV. E
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WEARPAD/WEARPLATE HOLE PATTERN
FOR REFERENCE ONLY
DRILL USING DT8931 TEMPLATE



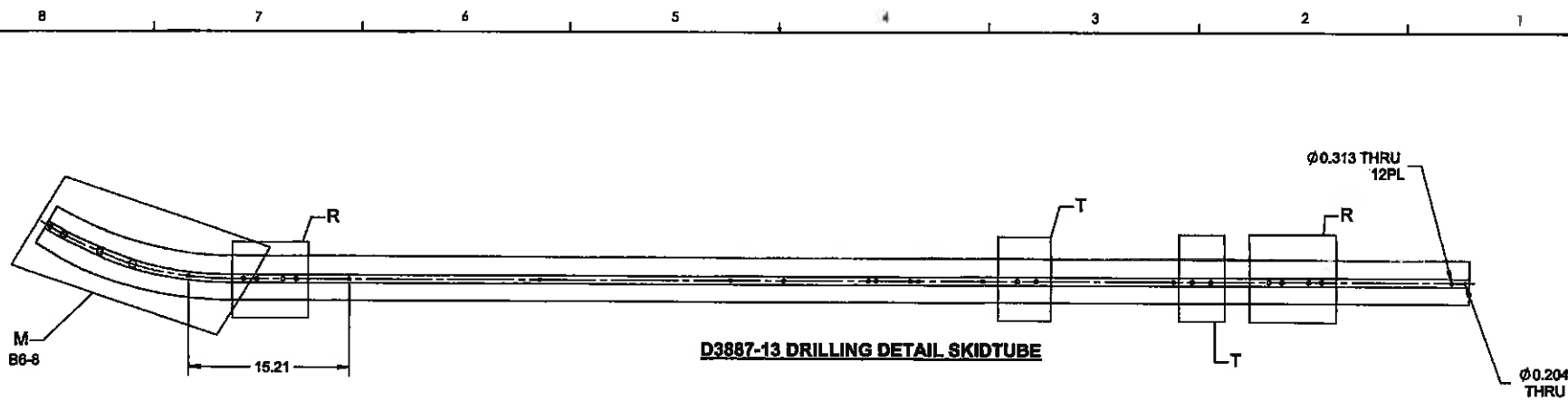
NOTES:

- 1) MATERIAL: MAKE -11 FROM -1 BEND DETAIL
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY AT FINAL ASSEMBLY
- 7) WEIGHT: N/A
- 8) USE DART DRILL TEMPLATE DT8931 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARPAD/WEARPLATE INSERTS.

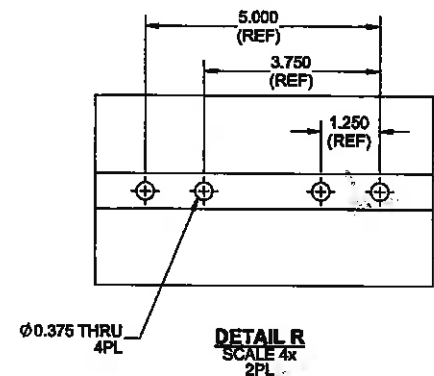
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2017-05-08

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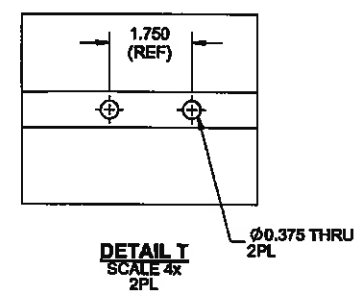
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CHECKED	RF	DRAWING NO.	REV. E
MFG. APPR.	DD	D3887	SHEET 8 OF 11
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D3887-13 DRILLING DETAIL SKIDTUBE



DETAIL R
SCALE 4x
2PL

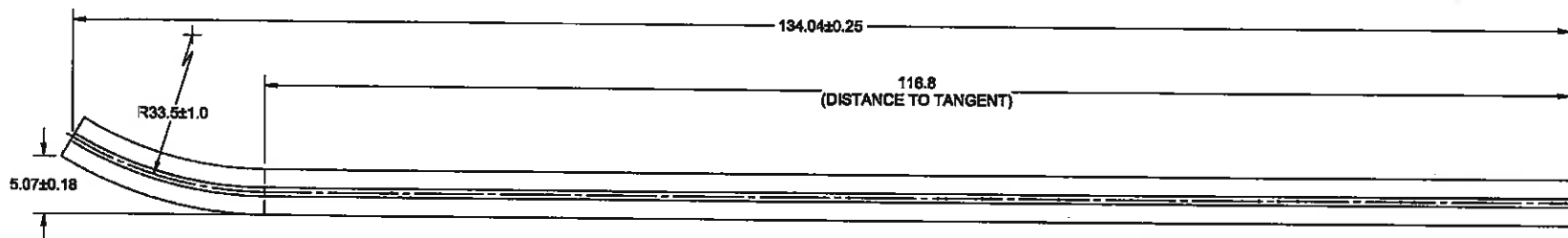


DETAIL T
SCALE 4x
2PL

- NOTES:**
- 1) MATERIAL: MAKE -13 FROM -1 BEND DETAIL
 - 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: IDENTIFY AT FINAL ASSEMBLY
 - 7) WEIGHT: N/A

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D3887-1 BEND DETAIL SKIDTUBE

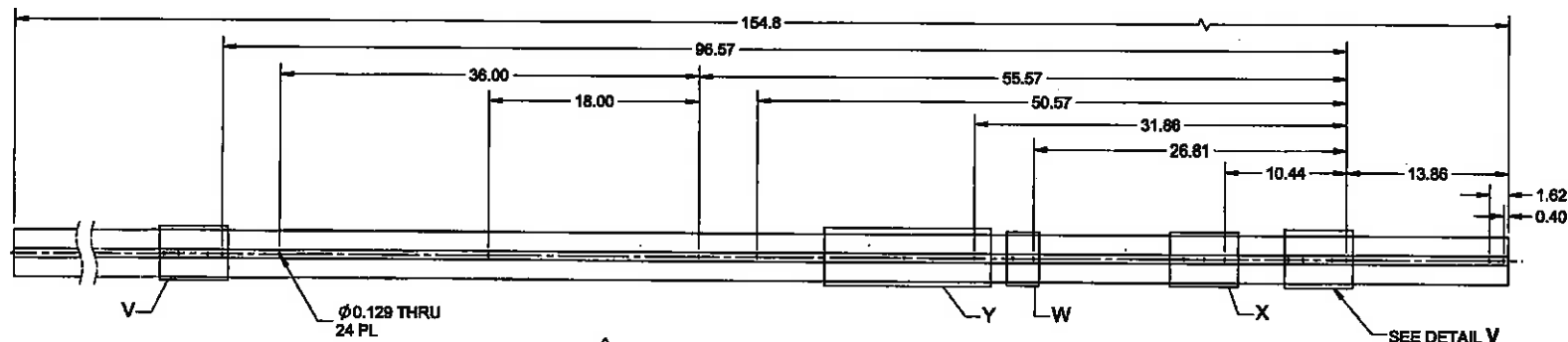
NOTES:

- 1) MATERIAL: MAKE -1 BEND DETAIL FROM -3 PILOT HOLE DETAIL
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY AT FINAL ASSEMBLY
- 7) WEIGHT: N/A
- 8) DAMAGE TOLERANCE ON FWD BEND:
THERE SHOULD BE NO VISIBLE WRINKLES IN THE BEND FROM THE GROUND TO A HEIGHT OF 8.5 INCHES ABOVE THE GROUND. IT IS ACCEPTABLE TO POLISH OUT GOUGES UP TO 0.020" DEEP IN THE BENT PORTION OF THE TUBE. A MAXIMUM REDUCTION IN DIAMETER OF 0.150" IS ACCEPTABLE IN THE BENT PORTION OF THE TUBE.

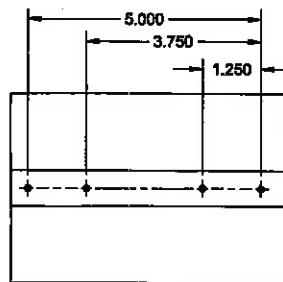
RELEASE
2017-05-08

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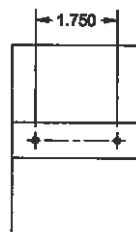
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CHECKED	RF	DRAWING NO.	REV. E
MFG. APPR.	DD	D3887	SHEET 10 OF 11
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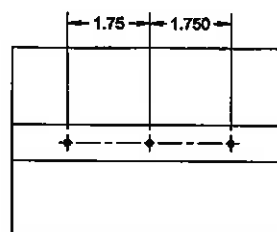
D3887-3 PILOT HOLE DETAIL SKIDTUBE



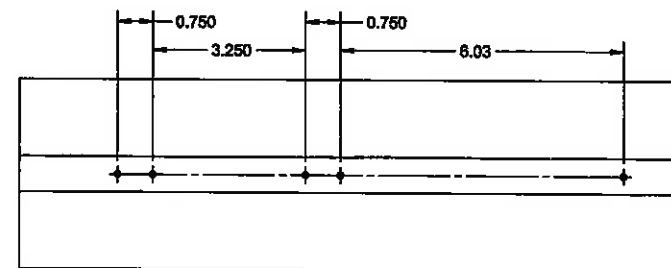
DETAIL V
SCALE 4X
2 PL



DETAIL W
SCALE 4X



DETAIL X
SCALE 4X



DETAIL Y
SCALE 4X

- NOTES:**
- 1) MATERIAL: MAKE FROM D2500-1-190 EXTRUSION
 - 2) FINISH: N/A
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: IDENTIFY AT FINAL ASSEMBLY
 - 7) WEIGHT: N/A

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CHECKED	RF	DRAWING NO.	REV. E
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DQA: _____ Date: _____

QA Closed: LLDate: Oct 24/19**WORK ORDER NON-CONFORMANCE / UPDATE****DART**
AEROSPACEWork Order update only ☐

Work Order: <u>174911</u> Part No. <u>D119-646-041</u> NCR No. <u>19-7533</u>		DISPOSITION Rework ☒ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%;"> <tr> <td>Skid-tube ☒</td> <td>Cross tube ☐</td> <td>Water Jet ☐</td> <td>Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>				Skid-tube ☒	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																																	
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Date: _____		Step #: <u>140</u>		QTY Effective: <u>1</u>		MRB (QSI042) Approval DAS <u>12</u> 9-89 <u>18/5/7</u>																																																																	
Description Work Order Deviation				Disposition																																																																			
FWD SADDLE hole Drilled to 0.4375" instead of 0.375".				Acceptable to match drill other side of skid tube, install $\phi 0.438" \text{ O.D. } \times \phi 0.254 \text{ I.D.}$ tubing made from 6061-T6 Round Bar per QA-A-225/B / QA-A-240/B / ASTM B21/B221, Ref M6061T6R & J3903 Rev.B. install / Weld per note 10 of page 8 of D3887 Rev.E. B/N _____ Resulting assembly is as strong or stronger than existing design.																																																																			
				Completed By <u>TW</u> <u>19-02-16</u> Lead hand / Supervisor Approval Verification <u>TW</u> <u>18-04-30</u> QC / QA Coordinator Approval DAS <u>68</u> <u>9-89</u> <u>11/16/2019</u>																																																																			
Root Cause <table style="width:100%;"> <tr> <td>Environment ☐</td> <td>No Re-verification ☐</td> </tr> <tr> <td>Design ☐</td> <td>Operator ☐</td> </tr> <tr> <td>Doc/Data ☐</td> <td>Offset/Setup ☐</td> </tr> <tr> <td>Equip/Tooling ☐</td> <td>Supplier ☐</td> </tr> <tr> <td>Handling/Pre ☐</td> <td>Training ☐</td> </tr> <tr> <td>Material ☐</td> <td>Use for Testing ☐</td> </tr> <tr> <td>Internal Transport ☐</td> <td>Poor Information ☐</td> </tr> <tr> <td>Tribal Knowledge ☐</td> <td>Rushing ☐</td> </tr> <tr> <td>LOA ☒</td> <td>Product Improvement ☐</td> </tr> <tr> <td>Substation ☐</td> <td>Process Improvement ☐</td> </tr> <tr> <td>Past Expiry Date ☐</td> <td>Manufacturing Process ☐</td> </tr> <tr> <td>Misidentified ☐</td> <td>Past Due ☐</td> </tr> </table>				Environment ☐	No Re-verification ☐	Design ☐	Operator ☐	Doc/Data ☐	Offset/Setup ☐	Equip/Tooling ☐	Supplier ☐	Handling/Pre ☐	Training ☐	Material ☐	Use for Testing ☐	Internal Transport ☐	Poor Information ☐	Tribal Knowledge ☐	Rushing ☐	LOA ☒	Product Improvement ☐	Substation ☐	Process Improvement ☐	Past Expiry Date ☐	Manufacturing Process ☐	Misidentified ☐	Past Due ☐	FAULT CATEGORY <table style="width:100%;"> <tr> <td>Pressure/Forced ☐</td> <td>Temperature/Cure ☐</td> <td>Power Loss/Surge ☐</td> <td>Positioned Wrong ☐</td> </tr> <tr> <td>Bending ☐</td> <td>Set-up ☐</td> <td>Folio/Program ☐</td> <td>Outside Dimensions ☐</td> </tr> <tr> <td>Centre Not Concentric ☐</td> <td>BOM/Route ☐</td> <td>Grain ☐</td> <td>Over/Under tolerance ☐</td> </tr> <tr> <td>Cracks ☐</td> <td>Broken/Damage/Defect ☐</td> <td>Weld ☐</td> <td>Part Incorrect ☐</td> </tr> <tr> <td>Crimp/Kink/Ripple/Wave ☐</td> <td>Inspection Incomplete/Unqualified ☐</td> <td>Wrong Stock Pulled ☐</td> <td>Part Lost/Missing ☐</td> </tr> <tr> <td>Cuffs ☐</td> <td>Contamination ☐</td> <td>Out of Sequence ☐</td> <td>Part Moved ☐</td> </tr> <tr> <td>Crushing ☐</td> <td>Countersink ☐</td> <td>Off-set ☐</td> <td>Drawing ☐</td> </tr> <tr> <td>Heat Treat ☐</td> <td>Cut Too Short ☐</td> <td>Mislabeled ☐</td> <td>Finish ☐</td> </tr> <tr> <td>Wave/Twist in Tube ☐</td> <td>Instructions Incomplete/Unclear ☐</td> <td>Fit/Function ☐</td> <td>Misread ☐</td> </tr> <tr> <td>Marks/Chatter ☐</td> <td>☒ Drill Holes</td> <td>Misaligned/off center ☐</td> <td>Turning Sequence ☐</td> </tr> </table>				Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Marks/Chatter ☐	☒ Drill Holes	Misaligned/off center ☐	Turning Sequence ☐
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OTHER: _____																																																																							